

*Attorney Docket No. 59489-8022.US01***AMENDMENT****IN THE CLAIMS**

1-10. (Cancelled)

11. (Presently and twice amended) A method for purifying a gas, the method suitable for purifying gas to a level of purity sufficient for semiconductor manufacturing, the method comprising the acts of:

cooling the gas to less 100 degrees C;

flowing the gas under pressure into a gas purification system enclosure via an inlet;

contacting said gas under pressure with a hydrogen sponge sorption unit including hydrogen sorption material and disposed within said gas purification system enclosure;

monitoring the temperature of said hydrogen sponge, wherein said flowing is shut down if the temperature of said hydrogen sponge exceeds an alarm temperature;

flowing said gas thorough a particle filtering device with said gas purification system enclosure; and

flowing said gas out of said gas purification system enclosure via an outlet.

12. (Unchanged) A method for purifying a gas as recited in claim 11, wherein the particle filtering device is manufactured from a sintered metal.

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13. (Presently and once amended) A method for purifying a gas as recited in claim 12~~1~~[2], wherein the particle filtering devices is substantially capable of removing particles from said outlet gas flow as small as .003 micron.
14. (Unchanged) A method for purifying a gas as recited in claim 12, wherein the particle filtering device is manufactured from at least one of nickel, stainless steel.
15. (Unchanged) A method for purifying a gas as recited in claim 12, wherein the particle filtering device is comprised of a plurality of filtering elements.
16. (Unchanged) A method for purifying a gas as recited in claim 15, wherein the filtering element is a cylindrical shape.
17. (Unchanged) A method for purifying a gas as recited in claim 15, wherein the filtering element is a disk shape.
18. (Unchanged) A method for purifying a gas as recited in claim 11, wherein the hydrogen sorption material is selected from among the group consisting of: Zr, Pd, Pt, Rh, Ru, Ni, Ti and alloys thereof.

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19. (Unchanged) A method for purifying a gas as recited in claim 11, wherein the hydrogen sorption material is selected from among the group consisting of: Zr-V-Fe alloys and Zr-Fe alloys.

20-47. (Cancelled)

48. (Previously cancelled)

49. (Previously added) The gas purification method as recited in claim 11, further comprised of the step of thermally regenerating said hydrogen sponge by heating said hydrogen sponge to a temperature of approximately 200 degrees Celsius.

50. (New) A gas purification system comprising:

a low temperature hydrogen source; said low temperature being less than 100 degrees C;

a hydrogen removal unit including hydrogen sorption material;

a particulate filtering device; and

an enclosure having an inlet and an outlet, said enclosure housing said hydrogen removal unit and filtering device, said hydrogen removal unit proximal to said inlet and in gaseous communication with said hydrogen source; said particulate filtering device proximal to said outlet and in gaseous communication with said hydrogen removal unit and said outlet.

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51 (New). The gas purification system as recited in claim 50, wherein no material in said enclosure will outgas hydrogen during active hydrogen removal or filtering.

52. (New) The gas purification system recited in claim 50, wherein said particle filtering device is manufactured from a sintered metal.

53 (New) The gas purification system as recited in claim 52, wherein said metal is nickel or stainless steel.

54. (New) The gas purification system as recited in claim 52, wherein said particle filtering device is comprised of a plurality of filtering elements.

55. (New) The gas purification system as recited in claim 50, wherein said hydrogen sorption material is selected from among the group consisting of: Zr, Pd, Pt, Rh, Ru, Ni, Ti and alloys thereof.

56. (New) The gas purification system as recited in claim 50, wherein said hydrogen sorption material is selected from among the group consisting of: Zr-V-Fe alloys and Zr-Fe alloys.